



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

INDEX to VOL. IV.

- ABBOTT (R.)** on the variation of a triple integral, 42.
- Acaroid resin**, 163.
- Achromatic eye-pieces**, single, construction and use of, 195.
- Actinograph**, or self-registering photometer, for meteorological purposes, 209.
- Actinometers**, photometers, &c., incompetent to give absolute measures of either heat or light, 389.
- Addison (W.)** on the distribution of the air-passages, and of the modes of formation of the air-cells of the lungs, 381.
- Aerolite**, 134.
- Afzelius (Dr. Adam)**, notice of the late, 18.
- Ainsworth (W.)**, geological and botanical notes on Northern Syria, 57.
- Air**, inductive capacity of, 41.
- Airy (G. B.)**, experiments on iron-built ships, for the purpose of discovering a correction for the deviation of the compass produced by the iron of ships, 140, 141.
- on the theoretical explanation of an apparently new polarity of light, 239, 247.
- on the rise and fall of the tides in the Thames, 330.
- on the meteorological instruments at the Royal Observatory, Greenwich, with which the meteorological observations have been made from November 1840 to July 1841, 330.
- on the laws of individual tides at Southampton and Ipswich, 445.
- Albert of Saxe-Coburg and Gotha (H.R.H. Prince)**, the address of congratulation on the occasion of his Royal Highness's marriage with Her Majesty the Queen, 204; the answer of His Royal Highness, 205.
- , address of congratulation on the occasion of the late traitorous attack of an assassin, 237.
- , address of congratulation on the birth of the Princess Royal, 281.
- Albert of Saxe-Coburg and Gotha (H.R.H. Prince)**, address of congratulation on the birth of the Heir to the Throne, 332.
- , address of congratulation on the providential escape of Her Majesty and His Royal Highness from the attack of an assassin, 392.
- Algebraic series**, on the summation of, 456.
- Alderson (Dr.)** on the difference of colour in different parts of the bodies of animals, 165.
- Alison (Rev. A.)**, notice of the late, 176.
- Alkaline and earthy bodies in plants**, on the formation of, 131.
- Allenheads**, meteorological journal for 1841 kept at, 221, 297, 371.
- Alten**, meteorological observations made at, 195, 229.
- Amarythrine**, chemical examination of, 233.
- America**, magnetical observations made on the north coast of, 4.
- , magnetic observations on the west coast of, and the adjacent islands, 288, 465.
- Ammonia**, resin of, 219.
- , its action on biniodide and perchloride of platinum, 380.
- Animal tissues**, the non-vascularity and peculiar uniform mode of organization and nutrition of, 308.
- tissues, on the supposed development of from cells, 468.
- Animalcule**, parasitic, of the human skin, a newly discovered, 455.
- Animals**, on the difference of colour in different parts of the bodies of, 165.
- , on the relation between the respiratory organs of, and the preservation of independent temperatures, 474.
- Anniversary Meetings**: Nov. 30, 1837, 4; Nov. 30, 1838, 84; Nov. 30, 1839, 167; Nov. 30, 1840, 250; Nov. 30, 1841, 331; Nov. 30, 1842, 399.

- Antarctic scientific Expedition, proposed by the British Association and the Royal Society to Her Majesty's Government, 169, 252, 401.
- , hints and instructions drawn up for the guidance of the, 169, 253.
- seas, a vessel sent out by Mr. Enderby for the purposes of discovery in the, 253.
- Arachnida, on the circulation of the blood in the, 458.
- Archil, chemical history of, 233, 337.
- Ardwick, description of the observatory at, 371.
- Arsenates, on the, 162.
- Assafetida, resin of, 219, 241.
- Astacus marinus, on the organ of hearing of, 472.
- Astronomical refractions, on, 60.
- clock, description of an, 221.
- Atkinson (J.) on a rain table and map, 221.
- Atmosphere, on the transparency of the, and the law of extinction of the solar rays in passing through it, 389.
- Atmospheric pressure, influence of the moon on the, 395.
- Attractions, on calculations of, 289.
- Aurora Australis, notices of the, in March 1841, 395.
- Aurora borealis, geometrical measurement of the height of, 162.
- , on the phenomena of the, 230.
- , on a remarkable appearance of the, 382.
- Azocerythrine, chemical examination of, 233.
- Azolitmine, 234.
- Azote, the equivalent numbers of, 123.
- Baily (F.), description of a new barometer fixed up in the apartment of the Royal Society, with an account of the mode now adopted for correcting the observed height of the mercury, 1.
- Bakerian Lecture: Mr. Ivory on the theory of astronomical refractions, 60.
- , Mr. W. Snow Harris on the elementary laws of electricity, 156.
- , Mr. Airy on the theoretical explanation of an apparently new polarity of light, 239.
- , Mr. G. Newport on the organs of reproduction, and on the development of the Myriapoda, 326.
- , Prof. J. D. Forbes on the transparency of the atmosphere, and the law of extinction of the solar rays in passing through it, 389.
- Barometer, description of a new one, fixed up in the apartments of the Royal Society, 1.
- , on the mode in which observations have been recorded in the Meteorological Journal of the Society, 2.
- , the Society's, its height above the mean level of the sea, 2.
- , compensating, description of a, 133.
- , hourly observations at sea of the, 239.
- , on variations of the mean height of, 211, 226.
- , on a cycle of eighteen years in the mean annual height of the, 292.
- , on a remarkable depression of the, 292.
- , on an irregularity in the height of the, 295.
- and thermometer, Coggan's, 72.
- Barometrical observations taken at Naples, 303.
- observations at Yarmouth, 369.
- observations, showing the effect of the direction of the wind on the difference between distant barometers, 386.
- Baroscope, hydropneumatic, description of a, 126.
- Barrow (Sir J.), magnetic observations, 220.
- Barry (Dr. M.), researches in embryology, 73, 136, 222, 279.
- , a Royal medal awarded to, 172.
- on the corpuscles of the blood, 234, 283, 323, 462.
- , a contribution to the physiology of cells, 222, 279.
- on the discovery of the germinal spot in the mammiferous ovum, 279.
- on the chorda dorsalis, 282.
- on fibre, 362, 384, 431.
- , spermatozoa observed within the mammiferous ovum, 432.
- on fossiparous generation, 441.
- , note on the observations of T. W. Jones, Esq., 462.
- Batten (Rev. Dr. J. H.), notice of the late, 15.
- Bauer (F.), biographical notice of, 342.
- Bdellium, resin of, 241.
- Becquerel (M.), the Copley medal

- awarded to, for his memoirs on electricity, 22.
- Belcher (Capt.), magnetic observations on the west coast of America and the adjacent islands, 288, 465.
- , boring register, Bow Island, South Pacific, 399.
- , remarks upon the tides at Tahiti, 440.
- Bell (A.) on rotatory motion, 66.
- Bell (Sir C.) on the nervous system, 217, 218.
- , biographical notice of, 402.
- Benzoin, resin of, 241; action of caustic lime on, 242; action of caustic potash on, 242; action of oxide of lead on, 242.
- Berengela resin, 219.
- Bibasic salts, 102.
- Bicyanide, new equi-atomic compound of, with binoxide of mercury, 135.
- Binocular vision, on, 76.
- Binoxide of mercury, new equi-atomic compound of bicyanide with, 135.
- Biographical notices of deceased Fellows, 10, 92, 173, 256, 341, 402.
- Birds of Kerguelen's Land, 298.
- collected between the Cape of Good Hope and Van Diemen's Land, 305.
- Blair (D.), hourly meteorological observations taken at Georgetown, British Guiana, 467.
- Blake (J.) on the mode of operation of poisons, 155.
- on the action of certain inorganic compounds when introduced into the blood, 284, 285.
- Blindness, congenital, on the cure of, 303.
- Blood, examination of the, in the different forms of fever accompanying inflammation and suppuration, 67.
- , experiments on the, in connexion with the theory of respiration, 78.
- , on the corpuscles of the, 234, 283, 323, 431, 462.
- , progressive division of the blood-disc into globules, 234; rapid and incessant changes in the form of altered blood-corpuscles, 234; the chorion formed of cells derived from corpuscles of the blood, 235; muscular fibre formed of cells derived from corpuscles of the blood, 235; state of the blood-corpuscles during vital turgescence of the vessels, 235.
- Blood, on the motion of the, 140.
- , action of certain inorganic compounds when introduced into the, 285.
- , facts observed in the coagulation of the, 384.
- , on the circulation of the, in the Myriapoda and the Macrourous Arachnida, 460.
- Blood-corpuscles of certain species of the genus *Cervus*, on, 199.
- , observations on, particularly with reference to the opinions of Dr. Barry, 431.
- , note on the observations of T. W. Jones, Esq., on the, 462.
- Blood-particles of the *Ornithorhynchus hystrix*, on the form of, 232.
- Blumenbach (J. F.), biographical notice of, 265.
- Bone, normal and adventitious, structure of, 198.
- Booth (J.) on the rectification and quadrature of the spherical ellipse, 387.
- Boring register, Bow Island, South Pacific, 399.
- Bowditch (Dr. N.), biographical notice of, 95.
- Bowerbank (J. S.) on the organic tissues in the bony structure of the Corallidae, 382, 383.
- Bowman (W.) on the minute structure and movements of voluntary muscles, 244, 301.
- on the structure and use of the Malpighian bodies of the kidney, 374, 375.
- , a Royal medal awarded to, 422.
- Bowring (J. C.) on a new method of determining the longitude, 52.
- Boys (Rev. T.) on the steam-wave, 372.
- Brain, on the decussation of fibres at the junction of the medulla spinalis with the medulla oblongata, 71.
- Brazil, magnetical observations made on the coast of, 4.
- Brewster (Sir David) on the colours of mixed plates, 33.
- on a remarkable property of the diamond, 291.
- on the phenomena of thin plates of solid and fluid substances exposed to polarized light, 302.
- Bristol, tide observations at, 73, 242.
- Broughton (J. D.), notice of the late, 17.
- Brown (R.), a Royal medal awarded

- to, for his discoveries in vegetable impregnation, 173.
- Brush, electric, 52, 55.
- Brussels, variation of the magnetic declination and horizontal intensity at, 329.
- Bunt (T. G.), description of a new tide-gauge constructed by, 53.
- , on tide observations made at Bristol by, 73, 242.
- Burnes (Sir A.), notice of the late, 413.
- Butler (Dr. S., Bishop of Lichfield), notice of the late, 258.
- Calculating machine, description of a, 243, 362.
- Calculi, on the decomposition and disintegration of, 442.
- Californias and Mexican coasts of the Pacific, geographical position of the principal points of the, 196.
- Calotype pictures, method of obtaining, 312.
- paper, preparation of, 312; its use, 313; fixing process, 314.
- Calorific rays in the solar spectrum, on the distribution of the, 209.
- Calorific spectrum, account of a process for rendering it visible, 209.
- Cambium, on the descent of the, in plants, 449.
- Cape of Good Hope, meteorological observations at, 374, 380.
- Cape Palmas, daily thermometrical observations at, 331.
- Carbon and nitrogen, compound bodies, 472.
- Carlini (Prof.), magnetic term observations made at Milan, 280, 311.
- , variation of the magnetic declination, horizontal intensity and inclination at Milan, 282, 294, 298, 329, 362, 371, 435, 456, 462.
- , observations on magnetic direction and intensity made at Milan, 295, 298.
- Carlisle (Sir A.), notice of the late, 260.
- Carpenter (Dr. W. B.) on the minute structure of the skeletons of the Invertebrata, 435, 466, 467.
- Carson (Dr. J.) on the motion of the blood, 140.
- Cartilage, articular, the non-vascularity and peculiar uniform mode of organization and nutrition of, 308.
- , fibro-, on the structure of, 309.
- Cartilage, the elements of, compared with corpuscles of the blood, 324.
- Cassini's (Dr.) theory of the astronomical refractions, 60.
- Catton (Rev. Thomas), notice of the late, 94.
- Cellular tissue, the elements of, compared with corpuscles of the blood, 324.
- Cells, on the physiology of, 222, 279.
- Cerebellum, an appendage to the brain rather than to the medulla oblongata and spinal nerves, 473.
- Cervus, genus, on the blood-corpuscles of the, 199.
- Chantrey (Sir F.), notice of the late, 341.
- Chemical action of the rays of the solar spectrum on preparations of silver, &c., 205.
- action, the source of power in the voltaic pile, 200, 213; sufficiency of, to produce voltaic currents, 215.
- constitution of bodies which undergo vinous fermentation, 149.
- equivalents of certain bodies, on the, 123.
- history of archil and litmus, 233, 337.
- history of the compounds of palladium and platinum, 379.
- rays of light, on their application to the purposes of pictorial representation, 131.
- theory of voltaic electricity, 201; contact theory, 200.
- Children (J. G.), his retirement from the office of Secretary, 10.
- Chinese lute, on the, 297.
- Chlorates, conversion of into chlorides, applied to the determination of equivalent numbers, 119.
- Chlorides, conversion of into nitrates, applied to the determination of equivalent numbers, 119.
- Chlorine, the equivalent numbers of, 123.
- , action of, on azolitmine and orceine, 234.
- , its action upon the ferrocyanate of potassa, 239.
- Chorda dorsalis, on the, 282.
- Christie (S. H.) on the importance of a more accurate determination of the variation of the magnetic needle, and likewise of the dip and of the intensity of terrestrial magnetism, 21.

- Chrysotype, a new photographic process, 394, 397, 398.
 Chorion, the, 76, 139.
 —, formed of cells arising in the oviduct, 225.
 —, on its formation out of cells, 279.
 Chronic diseases, application of iodide of potassium to the cure of, 473.
 Claudet (A.), new mode of preparation of the Daguerriotype plates, 315.
 Ciliary processes, the elements of the, compared with corpuscles of the blood, 324.
 Circle, computation of the ratio of the diameter to the circumference to 208 places of decimals, 302.
 Circulation of the blood in the Myriapoda and Arachnida, 458.
 Climate of London, on a cycle of eighteen years in the mean annual height of the barometer in the, and on a constant variation of the barometrical mean according to the moon's declination, 292.
 —, on the prevailing winds, mean temperature and depth of rain in the, 300.
 Clock, description of an escapement for an astronomical, 221.
 —, electro-magnetic, 249.
 Clouds, stationary, on, 33.
 Coal and fossil wood, imbedded in igneous rocks, 299.
 Coggan's (J.) self-registering thermometer and barometer, 72.
 Colebrooke (H. T.), notice of the life and works of, 10.
 Colours of mixed plates, on, 33.
 —, on Nobili's plate of, 195.
 —, vegetable, action of the rays of the solar spectrum on, 393, 397.
 — of flowers, of the, in general under the action of the spectrum, 393.
 Comet of 1843, 450, 456.
 Compass, experiments for discovering a correction for its deviation in iron-built ships, 141.
 Conchoidal surface, geometrical and mechanical elements of a, 81.
 Conduction, electrolytic, 50.
 —, or conductive discharge, 50.
 Conductors and insulators, analogy of, 50.
Conferva crispa of Dillwyn, 238.
Conferva fluviatilis of Linnæus, 238.
 Constant battery, Daniell's, 23.
 —, account of the effects of a large, 147.
 Constantinople, results of meteorological observations at, 293.
 Contact theory of voltaic electricity, 200; chemical theory, 201.
 Convection, or carrying discharge, 56.
 Cooper (Sir A. P.), biographical notice of, 344.
 Cooper (J. T.), description of a hydro-pneumatic baroscope, 126.
 Cooper (J. S.) on the visibility of certain rays beyond the ordinary red rays of the solar spectrum, 146.
 Copley Medals, awarded to M. Becquerel, 22; to J. F. Daniell, Esq., 23.
 —, awarded to Prof. Gauss, 99; to Prof. Faraday, 100.
 —, awarded to Prof. Liebig and to M. Sturm, 255.
 —, awarded to Dr. G. S. Ohm, 336.
 —, awarded to Prof. MacCullagh, 419.
 Corallidæ, on the organic tissues in the bony structure of the, 383.
 Copper, on the reduction of, 447.
 Cordilleras, heights of the principal points of, 196.
 Cornea, the, a non-vascular animal tissue, 310.
 Cornwall, electric conditions of the rocks and metalliferous veins of mines in, 317.
 Corpus luteum, elements of the, derived from corpuscles of the blood, 324.
 Council and Officers of the Royal Society:—for 1837–38, 28; for 1838–39, 105; for 1839–40, 184; for 1840–41, 272; for 1841–42, 355; for 1842–43, 423.
 Council of the Royal Society, their statement relative to Mr. Panizzi's pamphlet, 18.
 —, report of their proceedings, 21, 99, 332.
 —, report on the state of the Society's library, 333.
 Crozier (Capt. T. B. M.), meteorological observations taken on board H.M.S. Terror, 293, 374.
 Crustacea, on the organ of hearing in, 471.
 Crystalline lens, a non-vascular animal tissue, 310.

- Crystallography, on the theory of, 116.
 Curvature of surfaces, on, 112.
 Cuvier (M. F.), biographical notice of, 98.
 Cyanotype, a photographic process, 397, 398.
- Daguerréotype plates, new mode of preparation of, 315.
 Dalrymple (John) on the nerves of the uterus, 323.
 Dalton (Dr.) on the phosphates, 162.
 — on the arseniates, 162.
 —, a portrait of, presented to the Royal Society, 333.
 Daniell (Prof.), a Copley medal awarded to, 23.
 — on voltaic combinations, with reference to the mutual relations of the generating and conducting surfaces, 43.
 —, account of the effects of a large constant battery, 147.
 — on the electrolysis of secondary compounds, 153, 231.
 — on voltaic combinations, 43, 147, 383, 384.
 —, a Royal medal awarded to, 422.
 Darwin (C.) on the parallel roads of Glen Roy, 122, 127.
 Davidson (John), notice of the late, 17.
 Davy (Dr. John) on the male organs of some of the cartilaginous fishes, 129.
 — on the form of the blood-particles of the *Ornithorhynchus hystrix*, 232.
 — on the torpedo, 291.
 —, experiments on the blood in connexion with the theory of respiration, 78.
 Davy (Rev. M.), notice of the late, 173.
 DeCandolle (A. P.), biographical notice of, 346.
 Decidua, anatomy and physiology of the, 370.
 Decomposition, vegetable, influence of nitrogen in promoting, 148.
 DeMorgan (A.), description of a calculating machine, 243.
 Diamond, on a remarkable property of the, 291.
 — mines of Golconda, 280.
 Differential resistance measurer, 471.
 Dip of magnetic needle in the West Indies, on the North coast of Brazil and North America, 4.
 Disc, the, of Prof. Baer, 75.
 Discharge (electric), conductive, 50; disruptive, 50, 51, 55; electrolytic, 50; difference of, at the positive and negative surface of conductors, 54; spark, 51; brush, 52, 55; glow, 55; dark, 56; convective, 56.
 Discs, primitive, in blood-corpuscles exhibit an inherent contractile power, 324.
 Dollond (G.), a portrait of, in the possession of the Royal Society, 402.
 Donation Fund, some observations to call attention to the, 372.
 Drach (S. A.) on the diurnal temperature of the earth's surface, 377, 444.
 Dragon's blood, resin of, 136.
 Drawing, photogenic, 120, 124.
 Dulong (P. L.), biographical notice of, 97.
 Dumfries, account of the hurricane of January 7, 1839, 123.
 Dunlop (J.), observations of the dip and intensity made at sea, between England and Australia, 212.
- Earle (H.), notice of the late, 95.
 Earth, on the diurnal temperature of the, 377, 444.
 —, on the figure of the, 289.
 —, on the state of the interior of the, 83, 115, 129, 367.
 Earthquake in one of the Scilly Islands, 122.
 Earthy and alkaline bodies, on the formation of, with reference to their presence in plants, 131.
 Eldon (Earl of), notice of the late, 94.
 Electrical induction, specific, Prof. Faraday's discovery of, 37, 100.
 Electric charge, penetration of, within a dielectric, 39.
 — conditions of the rocks and metalliferous veins of mines in Cornwall, 317.
 — current, nature of, 56; transverse force of, 56.
 — currents, Dr. Ohm's researches into the laws of, 336.
 — force of the *Gymnotus*, on the character and direction of the, 111.
 — force, experimental relation of, to nervous force, 112.
 — force or forces, nature of, 77;

- relation of the electric and magnetic forces, 78.
- Electric inductive capacity, specific, of certain substances, 40, 392.
- Electricity evolved by the friction of water and steam against other bodies, 437.
- , M. Becquerel's memoirs on, 22.
- , on the elementary laws of, 156.
- , on the odour accompanying, 226.
- , Prof. Faraday's researches in, 37, 49, 54, 77, 111, 200, 213, 437.
- , voltaic, contact theory of, 200; chemical theory of, 201.; on the production of heat by, 280.
- Electro-chemical equivalents, on, 232.
- Electrolysis of secondary compounds, 153, 231.
- Electrolytic discharge, 50.
- Electro-magnetic clock, 249.
- Electrometer, 38.
- , hydrostatic, 156.
- , micrometer, 193.
- Electro-nitrogurets, on, 286.
- Elemi resin, 241.
- Ellipse and the hyperbola, method of proving the three leading properties of the, 443.
- , spherical, on the rectification and quadrature of the, 387.
- Ellipsoids of equilibrium, on, 34.
- Embryo, first rudiments of the, not two halves, 283.
- Embryology, researches in, 73, 136, 222, 279.
- Emys Benstedii, a remarkable fossil turtle, 305.
- Epithelium tables, cells and cylinders, compared with corpuscles of the blood, 324.
- Equations, numerical, new method of solving, 300.
- Equivalents, chemical, on, 119, 123.
- Erratic boulders of Lochaber, 128.
- Erythrine, chemical examination of, 233.
- Erythroleic acid, chemical examination of, 233.
- Erythrolein, 234.
- Erythryline, chemical examination of, 233.
- Erythrolitmine, 234.
- Escapement for an astronomical clock, description of an, 221.
- Eudiometry, application of the gas battery to, 464.
- Euphorbium resin, 241.
- Evans (Dr. W. J.) on the general and minute structure of the spleen, 456, 457.
- Exley (T.) on a new theory of physics, 325.
- Eye, on the structure and mode of action of the iris, 439.
- , on the cure of congenital blindness, 303.
- , on the anatomy and physiology of certain structures in the orbit, 311.
- Factorial expressions, on, 456.
- Falkland Islands, meteorological journal kept at, 330.
- Fallopian tube of the rabbit, ova found in the, 222.
- Faraday (Prof.), researches in electricity (11th Series), 37; (12th Series), 47, 49; (13th Series), 53, 54; (14th Series), 77; (15th Series), 111; (16th Series), 200; (17th Series), 213; (18th Series), 437.
- , a Copley medal awarded to, for his discovery of specific electrical induction, 100.
- , chemical account of the Cold Bokkeveld meteoric stone, 134.
- Farnborough (Lord), notice of the late, 94.
- Farquharson (Rev. Dr. J.), on a geometrical measurement of the height of the aurora borealis, 162.
- , on the localities affected by hoarfrost, 293, 294.
- , on ground-gru, or ice formed at the bottom of running water, 295.
- , on a remarkable appearance of the aurora borealis below the clouds, 382.
- Farre (A.) on the organ of hearing in Crustacea, 471.
- Fecundation, changes in the ovarian ovum preparatory to, 222; point of, 222; changes in the ovum immediately after, 223.
- Fellows of the Royal Society admitted, 4, 85, 168, 251, 340, 400.
- , table showing their number in 1837, 32; in 1838, 109; in 1839, 251; in 1840, 277; in 1841, 360; in 1842, 428.
- , Foreign Members admitted, 5, 168, 252, 400.
- Fellows of the Society, deceased, list of, 4, 85, 167, 251, 340, 399.

- Fermat, on a theorem of, 290.
 Fermentation, vinous, 150, 165.
 Fibre, on, 362, 384, 431.
 Fibres, decussation of, at the junction of the medulla spinalis with the medulla oblongata, 71.
 Fielding (Dr. G. H.) on the epidemic influenza at Hull, 381.
 Ferrall (J. M.) on the anatomy and physiology of certain structures in the orbit, 311.
 Figure of equilibrium, on determining the, 158.
 — of the earth, on the, 289.
 Fish, cartilaginous, on the male organs of, 129.
 Fisher (Rev. G.), magnetical observations of Capt. Sir E. Home, Bart., reduced by, 4.
 Fluid, on the conditions of equilibrium of an incompressible, 157.
 Fogs, on the formation of low, 33.
 Forbes (Prof. J. D.), the Rumford medal awarded to, for his discoveries in the polarization and double refraction of heat, 104.
 —, on the transparency of the atmosphere and the law of extinction of the solar rays in passing through it, 389.
 Fossil remains of the Iguanodon and Hylæosaurus, 290.
 — remains of turtles, 305.
 — wood and coal imbedded in igneous rocks, 299.
 Fossiparous generation, on, 441.
 Fowler's (T.) calculating machine, 243.
 Frankincense, consists of two acid resins, 163.
 Franz (Dr. J. C. A.) on the case of a gentleman born blind, and successfully operated upon in the 18th year of his age, 303.
 Friction of water and steam against other bodies, on the electricity evolved by, 437.
 Frodsham (W. J.) on the vibration of the pendulum, 78.
 Galbanum, resin of, 241.
 Gambodic acids, 163.
 Gamboge, resin of, 163; chemical formula of, 163.
 Ganglia, nervous, of the uterus, 321, 395.
 Garden (P.), account of the hurricane at Dumfries, Jan. 7, 1839, 123.
 Gas voltaic battery, on the, 463.
 Gases, inductive capacity of, 41.
 Gassiot (J. P.) on the possibility of obtaining a spark before the circuit of the voltaic battery is completed, 193.
 — on Nobili's plate of colours, 195.
 Gauss (Prof.), a Copley medal awarded to, for his researches in magnetism, 99.
 Generation, fossiparous, on, 441.
 Geology, on the parallel roads of Glen Roy, and of other parts of Lochaber, 127.
 — of Kerguelen's Land, 299, 305.
 —, Notes on Northern Syria, 57.
 —, physical, on the state of the interior of the earth, 83.
 —, physical, on the phenomena of precession and nutation, assuming the fluidity of the interior of the earth, 115, 129, 367.
 Geometrical forms of turbinated and discoid shells, on the, 79.
 Germ, the, or foundation of the new being, 223; comparison of the germs of animals and plants, 226.
 Germinal vesicle and its contents, the most primitive portion of the ovum, 74.
 — vesicle and spot, changes in, preparatory to fecundation, 222; after fecundation, 223; not a nucleus but a parent cell, 223.
 — in birds, batrachian reptiles and osseous fishes, 242.
 Gibraltar, wind table from observations taken at, 432.
 Gilbert (Davies), biographical notice of, 256.
 Gillies (Lieut.) on the variation of the magnetic needle, 437.
 Glen Roy, on the parallel roads of, 127.
 Glow, electric, 55.
 Golconda, on the diamond mines of, 280.
 Gold, on the reduction of, 447.
 Graafian vesicle, 74; of mammals, how related to the calyx of birds, amphibia and fishes, 74; the order of formation of the more permanent parts of the ovum and the Graafian vesicle in mammalia, 76.
 Graham (Prof. Thomas), a Royal medal awarded to, for his inquiries respecting the constitution of salts; of oxalates, &c., 102.

- Ground-gru, or ice formed at the bottom of running water, 295.
- Grove (W. R.) on some electro-nitrogurets, 286.
- on the gas voltaic battery, 463.
- Grover (Capt. J.), notice of the comet of 1843, 456.
- Guaiacum, resin of, 163.
- , action of light on a solution of this resin spread on paper, 393.
- Guernsey, meteorological journal kept at, 466.
- Guiana, meteorological observations taken at Georgetown, 467.
- Gulliver (G.) on suppuration, 67.
- on the blood-corpuscles of certain species of the genus *Cervus*, 199.
- Gymnotus, character and direction of the electric force of, 111.
- Hæmadynamometer of Poiseuille, 285.
- Haggard (W. D.), experiments made on a piece of Peña silver, 119.
- Hake (Dr.) on the structure and functions of the spleen, 164.
- Hall (C. R.) on the structure and mode of action of the iris, 439.
- Halliwell (J. O.), a catalogue of the manuscripts in the library of the Royal Society made by, 253, 334.
- Hanson (Prof.) on a new method of computing the perturbations of the planets, 435.
- Harding (Col. G. J.), wind table from observations taken at Gibraltar, 432.
- Hardy (P.) on a new and general notation applicable to the doctrine of life contingencies, 198.
- Hargreave (C. J.) on the calculation of attractions, and the figure of the earth, 289.
- Harris (W. S.) on the elementary laws of electricity, 156.
- on the specific inductive capacities of certain electric substances, 392.
- Hearing, the organ of, in Crustacea, 471.
- Heat, on the production of, by voltaic electricity, 280.
- , Prof. Forbes's discoveries in the polarization and double refraction of, 104.
- Hennell (H.), notice of the late, 419.
- Henning (Capt. A.), meteorological register kept during a voyage from London to Calcutta and back to London, 329.
- Henwood (W. J.) on the electric conditions of the rocks and metalliferous veins (lodes) of mines in Cornwall, 317.
- Herschel (Sir J. F. W.) on the art of photography, 131.
- on the chemical action of the solar spectrum on preparations of silver, &c., 203, 205.
- , a Royal medal awarded to, 255.
- on the action of the rays of the solar spectrum on vegetable colours, 393, 397.
- on improvements in photographic processes, 398.
- on an extraordinary luminous appearance [the Great Comet] in the heavens on the 17th of March, 1843, 450.
- Heygate (Dr. J.) on the nature and properties of iodide of potassium, and its applicability to the cure of chronic diseases, 473.
- Hibbert, (G.), notice of the late, 93.
- Hilton (J.) on the decussation of fibres at the junction of the medulla spinalis with the medulla oblongata, 71.
- Hoar-frost, on the localities affected by, 294.
- Hoare (Sir R. C.), notice of the late, 93.
- Hodgkinson (Eaton) on the strength of pillars of cast iron and other materials, 227.
- , Royal medal awarded to, 338.
- Hogg (J.) on the action of light upon the colour of the river sponge, 72.
- Holland (Lord), notice of the late, 264.
- Home (Capt. Sir J. E., Bart), magnetic observations made in the West Indies, on the Coasts of Brazil and North America, 4.
- Hoofs, the, one of a class of non-vascular animal tissues, 310.
- Hopkins (W.) on the state of the interior of the earth, 83.
- on the phenomena of precession and nutation, assuming the fluidity of the interior of the earth, 115, 129, 367.
- Horse, on the markings of the cel-back dun variety of, 163.
- Hoskins (Dr. S. E.) on the decomposition and disintegration of phosphatic vesical calculi, 442.
- , meteorological journal kept at Guernsey, 466.

- Howard (Luke) on the wet summer of 1839, 203.
- on variations of the mean height of the barometer and mean temperature and depth of rain, from 1815 to 1823, 211.
- on the variation, through a cycle of nine years, of the mean height of the barometer, mean temperature, and depth of rain, 226.
- on a cycle of eighteen years in the mean annual height of the barometer in the climate of London, and on a constant variation of the barometrical mean according to the moon's declination, 292.
- on a remarkable depression of the barometer, 292.
- on the prevailing winds, mean temperature and depth of rain in the climate of London, 299, 300.
- Howlett (S. B.), description of a compensating barometer, 133.
- Hull, on the epidemic influenza at, 381.
- Humboldt (Baron), his visit to the Royal Society, 370.
- , his proposal for the establishment of magnetical observatories, 9, 170.
- Hume (Sir A.), notice of the late, 94.
- Hunt (R.) on the influence of iodine in rendering argentine compounds, spread on paper, sensitive to light, 239.
- Hurricane at Dumfries, Jan. 7, 1839, account of the, 123.
- Hydraulic theory of shells, 81.
- Hydriodic salts, of the whitening power of, on paper prepared by the action of solar light, 208.
- Hydrogen, the equivalent numbers of, 123.
- Hydropneumatic baroscope, description of a, 126.
- Hygrometer (the Royal Society's), on the position of the, 3.
- Hylæosaurus, or Wealden lizard, 290.
- Ice at the bottom of running water, 295.
- Iguanodon, on the lower jaw of the, 290.
- India, on the Régar or black cotton soil of, 53.
- , papers from the magnetic observatories in, 361.
- Indian seas, on tide observations made in the, 153, 217.
- Induction, on, 37, 49, 54.
- , electrolytic, 51.
- , an action of contiguous particles, 38, 42; in curved lines, 39.
- , electric, 156.
- Inductive capacity, specific, 40, 392; of shell-lac 40; of glass, 41; of sulphur, 41; of oil of turpentine 41; of naphtha, 41; of air, 41; of gases, 41.
- apparatus, 38.
- Inductometer, differential, 59, 100.
- Influenza, epidemic, at Hull, 381.
- Insulation, electric, 50.
- Insulators and conductors, analogy of, 50.
- Integral, triple, on the variation of a, 42.
- Invertebrata, on the minute structure of the skeletons of the, 435, 467.
- Iodide of potassium, on the nature and properties of, 473.
- Iodine, its influence in rendering argentine compounds, spread on paper, sensitive to light, 239.
- Iodized paper, preparation of, 312.
- Ipswich, on the tides at, 445.
- Iris, structure and mode of action of the, 439.
- Iron-built ships, on the deviation of the compass in, 141.
- Iron, cast, on the strength of pillars of, 227.
- , wrought, on the strength of pillars of, 228.
- Ivory (J.) on such ellipsoids as are capable of having the resultant of the attraction of the mass upon a particle in the surface, and a centrifugal force caused by revolving about one of the axes, made perpendicular to the surface, 34.
- on the theory of astronomical refractions, 59, 60.
- on the conditions of equilibrium of an incompressible fluid, 157.
- , a Royal medal awarded to, 172.
- , biographical notice of, 406.
- Jalap, resin of, 219.
- Jeffreys (Julius) on the solubility of silica by steam, 232.
- Jellicoe (C.) on the laws of mortality, 115.
- Jesse (J.), description of an observatory constructed at Ardwick, 371.

- Johnston (J. F. W.) on a new equi-atomic compound of bicyanide with binoxide of mercury, 135.
 — on the constitution of the resins, 136, 162, 218, 241.
 Johnstone (Dr. John), notice of the late, 15.
 Jones (T. W.) on single vision with two eyes, 199.
 — memorandum addressed to the Royal Society by, 248.
 — on the blood-corpuscles, particularly with reference to opinions expressed and conclusions drawn by Dr. Barry, 431.
 Joule (J. P.) on the production of heat by voltaic electricity, 280.
 Julius terrestris, organs of reproduction of, 326.
 Kane (Dr. R.), contributions to the chemical history of archil and litmus, 233, 337.
 —, a Royal medal awarded to, 337.
 — on the chemical history of the compounds of palladium and platinum, 378, 379.
 Kater (Capt. H.), description of an astronomical clock invented by, 221.
 Kelly (Dr. W.) on low fogs and stationary clouds, 1, 33.
 Kerguelen's Land, magnetic-term observations taken at, 293; hourly magnetic observations taken at, 293.
 —, on the birds of, 298.
 —, geological remarks on, 299, 305.
 —, catalogue of geological specimens procured from, 305.
 —, plants from, 305.
 Kidney, on the structure and use of the Malpighian bodies of the, 375.
 Kin, a Chinese stringed instrument, 297.
 Knight (T. A.), biographical notice of, 92.
 König (C.), his retirement from the office of foreign secretary, 10.
 Kreil (Prof.), magnetic-term observations made at Prague, 280, 294, 329, 373, 380, 396, 439, 467.
 Labdanum, resin of, 219.
 LaCaille's arc of the meridian, on, 192.
 Lake Victoria, 83.
 Lambert (A. B.), notice of the late, 412.
 Latham (Dr. J.), notice of the late, 12.
 Lay (Mr.) on the scholar's lute among the Chinese, 297.
 Lee (Dr. R.) on the nerves of the gravid uterus, 189.
 — on the nervous ganglia of the uterus, 321, 395.
 — on the anatomy and physiology of the decidua, 370.
 Lefroy (Lieut. J. H.), meteorological observations made at St. Helena, 295.
 — on the influence of the moon on the atmospheric pressure, 395.
 L'Huillier (S.), biographical notice of, 350.
 Lempriere's meteorological register kept at Port Arthur, Van Diemen's Land, 200, 232, 329.
 Levels, line of, across Northern Syria, 57.
 Library of the Royal Society, catalogue of the, statement of the Council relative to Mr. Panizzi's claims, 9, 18, 171.
 —, catalogue of the miscellaneous manuscripts, 253, 334.
 —, catalogue of the miscellaneous literature, 334.
 —, catalogue of the manuscript letters, 253.
 —, report on the state of the, 333.
 Liebig (Prof.), a Copley medal awarded to, 256.
 Life contingencies, a new notation applicable to the doctrine of, 198.
 Light, dispersion of, Rev. B. Powell's theory of, 47.
 —, theory of dispersion of, as connected with polarization, 64, 210.
 —, its action upon the colour of the river sponge, 72.
 —, on the application of the chemical rays of, to purposes of pictorial representation, 131.
 —, its action on nitrated paper, 132.
 —, theoretical explanation of an apparent new polarity in, 239, 217.
 —, polarized, phenomena of thin plates of solid and fluid substances exposed to, 302.
 —, on the elliptic polarization of, 394, 436.
 Lindsay (Maj.-Gen.), hourly observations of the barometer and thermometer at sea, 239.
 Liquids, instrument for measuring the resistance of, 471.

- Litmus, chemical history of, 233, 337.
- Literature, miscellaneous, in the Library of the Royal Society, a catalogue made of the, 334.
- Liverpool, tide observations at, 242.
- Lloyd (Rev. H.), report on the co-operation of the Russian and German observers in a system of simultaneous magnetical observations, 197.
- Lloyd (J. A.), approximate deductions made from about 50,000 observations at the P. Louis Observatory, Mauritius, 232.
- Lobster, on the organ of hearing in the, 472.
- Lochaber, on the parallel roads of, 127.
- London, climate of, on a cycle of eighteen years in the mean annual height of the barometer in, 292.
- , on the prevailing winds, mean temperature and depth of rain in, 300.
- Longitude, new method of determining, 52.
- Lubbock (Sir John W.), notice of the late, 264.
- Lubbock (Sir J. W.) on a theorem of Fermat, 290.
- on an irregularity in the height of the barometer, 295.
- Lungs, on the distribution of the air-passages and the formation of the air-cells of the, 381.
- Lushington (E. L.), notice of the late, 177.
- Lute, Chinese, on the, 297.
- Lymphatic vessels, import and office of the, 448.
- M'Cormick (R.) on the birds of Kerguelen's Land, 298.
- , geological remarks on Kerguelen's Land, 299.
- MacCullagh (Prof.), a Copley medal awarded to, 419.
- Macclesfield (Earl of), notice of the late, 418.
- Macdonald (Dr.) on the markings of the eel-back dun variety of the horse, 163.
- Machines, on the theory of, 318.
- Macilwain (G.) on the relation between the respiratory organs of animals and the preservation of independent temperatures, 474.
- Maclear (T.), account of the fall of a meteoric stone at the Cape of Good Hope, 134, 210.
- , observations made for the verification of the amplitude of La Caille's arc of the meridian, 192.
- Madras, magnetic observations made at, 361, 371, 382.
- , magnetic and meteorological observations made at, 396.
- Magnesia, salts of, its action on the blood, 285.
- Magnetic and electric forces, relation of the, 77.
- Magnetic dip and intensity, observations made at sea between Falmouth and the Falkland Islands, 212.
- — between England and Australia, 212.
- declination, horizontal intensity and inclination, variation of the, observed at Milan, 282, 294, 298, 329, 362, 371, 435, 456, 462; at Brussels, 329.
- inclination and intensity, lines of, in the Atlantic Ocean, 212.
- needle, the importance of a more accurate determination of the variation of the, 21.
- needle, on the variation of the, 437.
- observations made in the West Indies, Coast of Brazil and North America, 4.
- observations, simultaneous system of, 197.
- observations made by H.M. ships *Erebus* and *Terror*, 221, 298.
- observations made at the observatories at Singapore, at Madras and at Simla, 361, 362, 382, 383.
- observatories, Baron Humboldt's proposal for the establishment of, 9, 170.
- observatories in India, papers from the, 361.
- Magnetic-term observations at Milan and Prague, 280, 293, 294, 311, 373, 396, 439, 467; at Kerguelen's land, 293.
- taken at Hobart Town and Van Dieman's Land, 298.
- taken at Singapore, at Madras and at Simla, 371.
- Magnetical and meteorological observations, proceedings of the Royal Society relating to, 21, 332, 401.

- Magnetical and meteorological observations, grant of £500 for the purchase of instruments, 21.
- — — made at Madras, 371, 396; at Trevandrum, 396.
- Magnetism, Prof. Gauss's researches on, 99.
- , theory of induced, 142.
- , terrestrial, Lieut-Col. Sabine's contributions to, 212, 221, 287, 369, 465, 468.
- Malpighian bodies of the kidney, on the structure and use of the, 375.
- Mansfield (Earl of), notice of the late, 264.
- Mantell (G.) on the lower jaw of the Iguanodon, and on the remains of the Hylæosaurus and other Saurians of Tilgate Forest, 289, 290.
- on the fossil remains of turtles in the chalk formation of the S. E. of England, 305.
- Manuscript letters in the Library of the Royal Society, a catalogue made of the, 253.
- Manuscripts in the Library of the Royal Society, a catalogue made of the, 253.
- Marsh (Dr. Herbert, Bishop of Peterborough), biographical notice of, 174.
- Marum (Dr. M. van), notice of the late, 99.
- Mastic, resin of, 136.
- Media, absorbent, of the analysis of the chemical rays of the spectrum by, 209.
- , of the exalting and depressing power exercised by certain, 209.
- Medulla oblongata, the cerebellum considered as an appendage to the brain rather than to the, 473.
- Medulla spinalis, on the decussation of fibres at the junction of, with the medulla oblongata, 71.
- Megalosaurus, remains of, discovered in the strata of Tilgate Forest, 290.
- Membrana granulosa, 74.
- Mercury, on a new equi-atomic compound of bicianide with binoxide of, 135.
- , photographic properties of, 398.
- Meridian, LaCaille's arc of the, on the verification of the amplitude of, 192.
- Metals, on their reduction from solutions of their salts by the voltaic circuit, 447.
- Meteoric stone, account of the fall of a, at the Cape of Good Hope, 134, 210; chemical account of the, 134.
- Meteorological instruments at the Royal Observatory, Greenwich, with which observations have been made, from Nov. 1840 to July 1841. 330.
- journal kept at Allenheads, Northumberland, 221, 297, 371.
- journal kept at the Falkland Islands, 330.
- journal kept at Guernsey, 466.
- observations on the mode in which they have been recorded in the Journal of the Royal Society, 2.
- — — made at Alten in Finmarken, 195; remarks on, 229.
- — — taken on board H.M.S. Erebus and Terror, 293, 303, 374, 380.
- — — taken at Constantinople, 293.
- — — made at St. Helena, 295.
- — — made at Toronto, 295, 380.
- — — made at Plymouth, 303.
- — — taken at Madras, 362, 371, 382; at Simla, 362, 371, 383.
- — — taken at the magnetic observatory, Cape of Good Hope, 374, 380.
- — — taken at Van Diemen's Land, 374, 378, 380.
- — — taken by the Niger Expedition, 380.
- — — taken at Georgetown, British Guiana, 467.
- register kept at Port Arthur, 200, 232, 329.
- register kept during a voyage from London to Calcutta and back to London, 329.
- Microscopical examination of the teeth, 70.
- examination of the texture of shells, 435.
- examination of the texture of the iris in different animals, 439.
- Milan, magnetic-term observations made at, 280, 311.
- , variation of the magnetic declination, horizontal intensity and inclination observed at, 282, 294, 298, 329, 362, 371, 435, 456, 462.
- , observations on magnetic direction and intensity made at, 295, 298.
- Mixed plates, on the colours of, 33.
- Modulus of a machine, 319; of a pulley, 320.

- Mollusca, on the structure of the skeletons or hard parts of the, 435.
- Monobasic salts, 102.
- Moon, new method of determining the longitude by an absolute altitude of, 52.
- , on the influence of, on the atmospheric pressure, 395.
- Morichini (Prof.), notice of the late, 18.
- Mortality, on the laws of, 115.
- Moseley (Rev. H.) on the geometrical forms of turbinated and discoid shells, 79.
- on a calculating machine, 362.
- on the theory of machines, 318.
- Motion, rotatory, 66.
- Mucus-globules, compared with corpuscles of the blood, 324.
- Mudesous and mudesic acids, 239.
- Munster (Earl of) notice of the late, 414.
- Murchison (R. I.) description of Coggan's self-registering thermometer and barometer, 72.
- Muscle, facts observed in the formation and structure of, 364.
- , voluntary, on the minute structure and movements of, 244, 301; the contraction of a muscle is the essential cause of its rupture, 301; there is no repellent force between the contractile elements of muscular fibre, 301.
- Muscular tissue compared with corpuscles of the blood, 324.
- Myriapoda, on the organs of reproduction and the development of the, 326.
- , on the circulation of the blood in the, 458.
- Naples, barometrical observations taken at, 303.
- Necker (L. A.), *Appercu sur une manière nouvelle d'envisager la théorie cristallographique dans le but d'établir les rapports de celle-ci avec la forme sphérique ou elliptique, des molécules, ainsi qu'avec l'effet des milieux sur la forme cristalline*, 116.
- Nerves, on the, 434.
- , physiological inferences derived from human and comparative anatomy respecting the origin of the, 472.
- of the gravid uterus, on the, 189.
- Nervous force, experimental relation of, to electric force, 112.
- ganglia of the uterus, 321, 395.
- system, on the, 218; the spinal nerves, 218; respiratory system of, 218; supply of blood to the nerves of the respiratory system, 218.
- tissue, compared with corpuscles of the blood, 324.
- Nervous and circulatory systems in articulated animals, 458.
- Newbold (Capt.) on the Régar or black cotton soil of India, 53.
- Newbold (T. J.) on the diamond mines of Golconda, 280.
- Newport (G.) on the organs of reproduction, and on the development of the Myriapoda, 326.
- on the structure and development of the nervous and circulatory systems in articulated animals, 458.
- Newton's (Sir I.) solutions of the problem of the astronomical refractions, 59, 60.
- , an original portrait of, presented to the Royal Society by Prof. Vignolles, 296.
- , the autograph of the *Principia* in the possession of the Royal Society, 253, 335.
- Niger Expedition, 253, 380, 401.
- Nitrates, conversion of into chlorides, applied to the determination of equivalent numbers, 119.
- Nitrogen, its influence on the growth of plants, 66, 148.
- , its evolution during the growth of plants, 70.
- , its influence in promoting vegetable decomposition, 148.
- and carbon, compound bodies, 472.
- Nobili's plate of colours, on, 195.
- Northampton (Marquis of), address at Anniversary Meeting, Nov. 21, 1839, 168.
- , address at Anniversary Meeting, Nov. 30, 1840, 252.
- , letter to the Royal Society, read at the Anniversary Meeting, Nov. 30, 1841, 331.
- , address at Anniversary Meeting, Nov. 30, 1842, 400.
- Norton (Capt. J.), on a percussion shell to explode at the bottom of the sea, 248.
- Nutation and precession, phenomena

- of, assuming the interior of the earth to be fluid and heterogeneous, 115, 129, 367.
- Observatory at Ardwick, description of, 371.
- Oceine, chemical examination of, 233, 337.
- Ohm (Dr.), a Copley medal awarded to, for his researches into the laws of electric currents, 336.
- Olbers (Dr.), notice of the late, 267.
- Olibanum, resin of, 163.
- Operculum, traces of progressive stages of its growth remain on it, 80; its spiral a logarithmic spiral, 80.
- Opononax, resin of, 219, 241.
- Ornithorhynchus hystrix, on the form of the blood-particles of the, 232.
- Otaheite, new determination of the magnetic elements at, 288.
- Ovisac, on the origin and structure of the true, a vesicle common to all vertebrated animals, 73; in mammalia, &c., 74; cavity in which often found, 75; peculiar granules of the, 75; the fluid contained in the, 75; parasitic ovisacs, 75.
- Ovum, the germinal vesicle and its contents are those parts which are first formed, 74; disappearance of ova and formation of others, 75; the ovum conveyed to the periphery of the Graafian vesicle, 75; the order of formation of the more permanent parts of the ovum and the Graafian vesicle in mammalia, 76; the mature and immature, 137; effects produced on, in the ovary by maceration, 137; in the ovary *post coitum*, 137; locality in which fecundated, 137; discharge of from the ovary, 137; the ovum after it has left the ovary, 138; its minute size no criterion of the degree of its development, 139; abortive ova, 139; may pass through at least one-and-twenty stages of development before it has attained the diameter of half a line, 139; some of the earliest appearances of the, 139; changes in the ovum consequent on fecundation, 222; no fixed relation between the degree of development of ova, and their size, locality or age, 224; the elements of the, compared with corpuscles of the blood, 324.
- Ovum, mammiferous, discovery of the germinal spot in the, 279; spermatozoa observed in, 432.
- Oxmantown (Lord), experiments on the reflecting telescope, 238.
- Oxus, the river, discovery of the source of, 83.
- Oxygen, the equivalent numbers of, 123.
- Palgrave (Sir F.), account of the shooting stars of 1095 and 1243, 210.
- Palladium, on the chemical history of the compounds of, 379.
- , on the reduction of, 447.
- Panizzi's (Mr.) pamphlet, statement of the Council relative to, 18.
- Paper, sensitive, on a new kind of, for photographic purposes, 134.
- Parallel roads of Glen Roy, and of other parts of Lochaber in Scotland, on the, 127.
- Parat (D.), nouveaux faits à ajouter à la théorie de la chaleur et à celle de l'évaporation, 473.
- Parish (Sir W.), barometrical observations taken at Naples, 303.
- Peña silver, experiments on, 119.
- Pendulum, on the vibration of the, 78.
- Penny (F.) on the application of the conversion of chlorates and nitrates into chlorides, and of chlorides into nitrates, to the determination of equivalent numbers, 119.
- Pepys (W. H.) on the respiration of the leaves of plants, 466.
- Percussion shell, to explode at the bottom of the sea, 248.
- Phillips (Capt. C.), notice of the late, 262.
- Phillips (R.) on the chemical equivalents of certain bodies, 123.
- Phosphates, on the, 162.
- Photogenic drawing, on the art of, 120.
- Photography, preparation of photogenic paper, 124, 134.
- , account of the processes employed in photogenic drawing, 124.
- , on fixing the image, 125.
- , on the art of, 131.
- , influence of iodine in rendering argentine compounds, spread on paper, sensitive to light, 239.
- , improvements in, 312.
- , on fixing, taking copies and transfers, and the preparation of the paper, 206.

- Photography, new processes in, 393, 397, 398.
 —, photographic properties of mercury, 398.
 Photometer, self-registering, 209.
 Physical geology, 83, 115, 129, 367.
 Physics, a new theory of, 325.
 Physiology of vision, 76.
 — of cells, 222, 279.
 — of the decidua, 370.
 — of certain structures in the orbit, 311.
 — of the iris, 439.
 Piccolomini (Comte), geographical position of the triangulations of the Californias and of the Mexican coasts of the Pacific, with heights of that part of the Cordilleras, 196.
 Pigmentum nigrum, compared with corpuscles of the blood, 324.
 Pigotite, on the constitution of, 239.
 Pillars of cast-iron and other materials, on the strength of, 227.
 Pinus abies, resin of, 163.
 Planets, new method of computing the perturbations of, 435.
 Plants, the influence of nitrogen on the growth of, 66, 148.
 —, on the evolution of nitrogen during the growth of, 70.
 —, on the formation of alkaline and earthy bodies in, 131.
 — from Kerguelen's land, 305.
 —, on the ascent of the sap, and new method of preparing, for physiological investigations, 432.
 —, on the descending fluids of, 449.
 —, on the respiration of the leaves of, 466.
 —, carbon and nitrogen made by, during their growth, 472.
 Platina, on the reduction of, 447.
 Platinum, on the compounds of, 380.
 Plesiosaurus, remains of, found in Tilgate Forrest, 290.
 Plymouth, on the laws of low water, and on the permanency of mean water at, 152.
 —, tide observations at, 242.
 —, hourly meteorological observations made at, 303.
 Poiseuille's hæmadynamometer, 285.
 Poisons, on the mode of operation of, 155.
 Poisson (S. D.), biographical notice of, 269.
 Polarimeter, an instrument for measuring the degrees of polarization, 307.
 Polarization and double refraction of heat, Prof. Forbes's investigations of the, 104.
 —, elliptic, of light, 394, 436.
 —, on the theory of the dispersion of light as connected with, 61, 210.
 Polarized light, phenomena of thin plates of solid and fluid substances when exposed to, 302.
 Pollock (Sir F.), method of proving the three leading properties of the ellipse and the hyperbola from a well known property of the circle, 443.
 Port Arthur, Van Diemen's Land, meteorological register kept at, 200, 232, 329.
 —, register of tides at, 232.
 Potassium, electro-chemical equivalents of, 232.
 —, on the ferrosesquicyanuret of, 239.
 —, iodide of, its applicability to the cure of chronic diseases, 473.
 Powell (Rev. B.) researches towards establishing a theory of the dispersion of light, 47.
 — on the theory of the dispersion of light as connected with polarization, 64, 210.
 — on the theory of dark bands formed in the solar spectrum by transparent plates, 211.
 — on the elliptic polarization of light, 394.
 — on certain cases of elliptic polarization of light by reflection, 436.
 Prague, magnetic-term observations made at, 280, 294, 329, 373, 380, 396, 439, 467.
 Precession and nutation, phenomena of, assuming the interior of the earth to be fluid and heterogeneous, 115, 129, 367.
 Prevost (P.), biographical notice of, 180.
 Prince of Wales's Island, tidal observations at, 311.
 Princep (J.), biographical notice of, 259.
 Principia, Newton's, the manuscript of, in the possession of the Royal Society, 253, 335.
 Prismatic colour, new, 208.
 — spectrum, extension of the visible, 207.

- Prismatic spectrum, mathematical investigation of the phenomena of dark bands crossing the, 211.
- Prony (M. de), biographical notice of the late, 178.
- Prussia (King of), His Majesty's visit to the Royal Society, 370.
- Pterodactylus, remains of, discovered in Tilgate Forrest, 290.
- Pulley, modulus of the, 320.
- Pus-globules, derived from corpuscles of the blood, 324.
- Quetelet (Prof.) on the variation of the magnetic declination and horizontal intensity at Brussels, 329.
- Rabbit, ova found in the Fallopian tube and uterus of the, 222.
- Rain, average annual depth of, in London, 300.
- , depth of, in 1839, 203.
- Rain-gauge, a few remarks on the, 297.
- , the Royal Society's, on the position of, 3.
- Rainey (G.) on the cause of the ascent and continued motion of the sap, 432.
- on the descending fluids of plants, 449.
- Rays of the solar spectrum, the chemical action of the, on preparations of silver, &c., 205; combined chemical action of rays of different degrees of refrangibility, 208; the whitening power of several under the influence of hydriodic salts, 208; analysis of the chemical by absorbent media, 209.
- Reade (Rev. J. B.) on a new theory of earthy bases of vegetable tissues, 52.
- on the construction and use of single achromatic eye-pieces, 195.
- Receipts and Expenditure of the Royal Society, in 1836-37, 29; in 1837-38, 106; in 1838-39, 185; in 1839-40, 272; in 1840-41, 355; in 1841-42, 423.
- Red rays, chemical action traced much beyond the extreme, 208.
- Redhouse (J. W.), results of meteorological observations at Constantinople, 293.
- Rees (Dr. G. O.) on the chemical analysis of the contents of the thoracic duct, 373.
- Refractions, astronomical, on the theory of, 59, 60; Cassini's theory, 60; problem of, Newton's solutions, 59, 60; comparison of tables of, 63.
- Refractive indices, comparison of observed, with the results of theory, 47.
- Régar soil of India, on the, 53.
- Resins, on the constitution of, 136, 162, 218, 241.
- Respiration, theory of, experiments on the blood in connexion with, 78.
- of the leaves of plants, on the, 466.
- Respiratory organs of animals and the preservation of independent temperatures, the relation which exists between, 474.
- system of nerves, on the, 218.
- Rete mucosum, 165.
- Retin-asphalt, resin of, 219.
- Rickman (Mr.), notice of the late, 261.
- Riddell (Lieut. E. J. B.), meteorological observations made at Toronto, 295.
- Rigaud (Prof.), biographical notice of, 175.
- Rigg (R.) on the influence of nitrogen on the growth of plants, 66, 148.
- on the evolution of nitrogen during the growth of plants, 70.
- on the formation of alkaline and earthy bodies with reference to their presence in plants, 131.
- on the influence of nitrogen in promoting vegetable decomposition, 148.
- on the chemical constitution of bodies which undergo the vinous fermentation, 149, 165.
- on the formation of alkaline and earthy bodies by chemical action, 165.
- , experiments showing that carbon and nitrogen are compound bodies, 472.
- Ritchie (Wm., LL.D.), notice of the late, 14.
- Robertson (J.), geological specimens procured from Kerguelen's Land, 305.
- , description of plants from Kerguelen's Land, 305.
- , catalogue of birds collected on board H.M.S. Terror, between the Cape of Good Hope and Van Diemen's Land, 305.

- Roccella tinctoria*, (Archil-weed) chemical examination of, 233, 337.
- Roccelline, 233.
- Rokewode (J. G.), notice of the late, 418.
- Ross (Capt. J. C.), magnetic observations, 220.
- , magnetic-term observations taken on board H.M.S. Erebus and Terror, 298.
- , magnetic-term observations taken at Kerguelen's Land, 293.
- , magnetic-term observations made at Van Diemen's Land, 298.
- , hourly magnetic observations taken at Kerguelen's Land, 293.
- , hourly magnetic observations taken at Van Diemen's Land, 298.
- , meteorological observations taken on board H.M.S. Erebus and Terror, 293, 303, 374, 380.
- , notices of the Aurora Australis in Mar. 1841, 395.
- Rotatory motion, on, 66.
- Royal Medals, the grant of the, continued by Her Majesty Queen Victoria, 69, 87.
- , alterations in the laws for the distribution of, 83.
- , awarded to the Rev. William Whewell, 6, 24; to H. F. Talbot, Esq., 101; to Prof. Thomas Graham, 102; to Sir J. F. W. Herschel, 255; to Prof. Wheatstone, 255; to Robert Kane, M.D., 337; to Eaton Hodgkinson, Esq., 338; to W. Bowman, Esq., 422; to Prof. Daniell, 422.
- Royal Observatory, Greenwich, on the meteorological instruments at, 330.
- Rumford Medal, awarded to Professor Forbes, 104; to Mr. Fox Talbot, 422.
- Rutherford (W.), computation of the ratio of the diameter of a circle to its circumference to 208 places of decimals, 302.
- Sabine (Joseph), notice of the late, 15.
- Sabine (Lient.-Col.) on magnetical observations in Germany, Norway, and Russia, 197.
- , contributions to terrestrial magnetism, 212, 221, 287, 369, 465, 468.
- , remarks on the meteorological observations made at Alten, 229.
- Sagapenum, resin of, 241.
- Saint Helena, meteorological observations made at, 295.
- Salts, Prof. Graham's inquiries respecting the constitution of, 102.
- Salts of magnesia, zinc, copper, lime, strontia, baryta, lead, silver, soda, ammonia and potass, their action on the blood, 285.
- Sandarach, resin of, 163.
- Sap, on the cause of the ascent and continued motion of, 432.
- , on the descent of, in plants, 449.
- Sarcolemma, or tunic of the primitive fasciculus of voluntary muscle, 245.
- Saunders (G.), notice of the late, 178.
- Saurians, remains of, discovered in the strata of Tilgate Forest, 290.
- Savart (F.), biographical notice of, 352.
- Scammony, resin of, 218.
- Schœnbein (Prof.) on the odour accompanying electricity, 226.
- Scilly Islands, shock of an earthquake in the island of St. Mary's, 122.
- Sea's surface, laws of the rise and fall of, during each tide, 242.
- Secondary compounds, electrolysis of, 153, 231.
- Seppings (Sir R.), notice of the late, 263.
- Shell, percussion, to explode at the bottom of the sea, 248.
- Shells, microscopic examination of the texture of, 435.
- , on the combinations of the component elements of, 467.
- , turbinated and discoid, geometrical forms of, 79.
- Shell-lac, specific inductive capacity of, 40, 100.
- Ship's compass, on the deviation of, in iron-built ships, 141.
- , iron-built, experiments for discovering a correction for the deviation of the compass in, 141.
- Shooting stars, account of those of 1095 and 1243, 210.
- Silica, on its solubility by steam, 232.
- Silver, Peña, experiments on, 119.
- , the equivalent number of, 123.
- , on the reduction of, 447.
- Simla, magnetic and meteorological observations made at, 362, 371, 383.
- Singapore, tidal observations at, 311.
- , magnetic-term observations made at the observatory at, 371.
- , graphic representations of the term-day observations, 371.

- Singapore, magnetic observations at, 382.
- Skin, on the special function of the, 445.
- , a newly discovered parasitic animalcule of the, 455.
- Smee (A.) on the ferrosesquicyanuret of potassium, 239.
- on the structure of normal and adventitious bone, 198.
- on the reduction of metals from solutions of their salts by the voltaic circuit, 447.
- Smith (Sir W. Sydney), notice of the late, 264.
- Smyth (Capt.), his retirement from the office of foreign secretary, 172.
- Soane (Sir John), notice of the late, 16.
- Sodium, electro-chemical equivalents of, 232.
- Solar spectrum, visibility of certain rays beyond the ordinary red rays of the, 146.
- , chemical action of the rays of the, on preparations of silver, &c., 205; chemical analysis of the, 207; of the whitening power of the several rays under the influence of hydriodic salts, 208; analysis of the chemical rays by absorbent media, 209; on the distribution of the calorific rays in the, 209.
- , theory of the dark bands formed in, 211.
- , action of the rays of the, on vegetable colours, 208, 393, 397.
- Somerville (Mrs.), a bust of, by Chantrey, in the possession of the Royal Society, 402.
- Southampton, on the tides at, 445.
- Spaniolitmine, 234.
- Spark, electric, 51.
- Spectrum, solar, on the visibility of rays beyond the ordinary red rays of, 146.
- , calorific, account of a process for rendering it visible, 209.
- , prismatic, extension of the visible, 207; phenomena of dark bands crossing the, 211.
- Speculum of a reflecting telescope, on the, 238.
- Spermatozoa observed within the mammiferous ovum, 432.
- Spiral, logarithmic, the form affected by the opercula of turbinated shells and by these shells, 80.
- Spleen, on the structure and functions of the, 164.
- , on the general and minute structure of the, 456.
- Sponge (*Spongilla fluviatilis*), the action of light upon the colour of, 72.
- Springs, intermitting, on, 43.
- Stark (Dr. J.) on the nerves, 434.
- on the supposed development of the animal tissues from cells, 468.
- Steam, solubility of silica by, 232.
- Steam-wave, on the, 372.
- Steel, strength of pillars of, 228.
- Steneosaurus, remains of, discovered in Tilgate Forest, 290.
- Stereoscope, an instrument for the investigation of the phenomena of binocular vision, 77.
- Strength of pillars of cast-iron, &c., 227.
- Sturm (M.), a Copley medal awarded to, 256.
- Sugar, not constituted of carbon and water only, 150.
- Sullivan (Lieut. B. J.), observations of the dip and intensity, made at sea between Falmouth and the Falkland Islands, 212.
- Sulphur, inductive capacity of, 41, 100.
- Sulphuric acid, on its relative attractions for water, 81.
- , on the manufacture of, 81.
- Sun's atmosphere, indications of an absorbent action in the, 208.
- Suppuration, on, 67.
- Sussex (Duke of), his Royal Highness's address read at Anniversary Meeting, Nov. 30, 1837, 5.
- , address on the occasion of Her Majesty inscribing her name in the Charter Book as Patroness of the Royal Society, 6, 69, 88.
- , address read at Anniversary Meeting, Nov. 30, 1838, on his retirement from the office of President, 86.
- , the cordial thanks of the Society presented to, 99.
- , portrait of, in the possession of the Royal Society.
- , address of condolence to Her Majesty on the demise of, 254.
- Swan (J.), physiological inferences derived from human and comparative anatomy respecting the origin of the nerves, &c. 472.
- Sykes (Lt.-Col.), remarks on the me-

- teorological observations made at Alten, 229.
- Syria, Northern, account of a line of levels across, 57.
- Tahiti, tide observations at, 440.
- , general remarks on the tides at, 440.
- Talbot (H. F.), the Royal medal awarded to, for his researches in the integral calculus, 101.
- on the art of photogenic drawing, 120.
- , account of the processes employed in photogenic drawing, 124.
- on a new kind of sensitive paper, 134.
- on improvements in photography, 312.
- , the Rumford medal, awarded to, 422.
- Tate (W.) on factorial expressions and the summation of algebraic series, 456.
- Taylor's theorem, new demonstration of, 456.
- Teeth, on the structure of the, 70.
- Telerythrine, chemical examination of, 233.
- Telescope, reflecting, experiments on the, 238; method of forming a large speculum of several castings, 239.
- , construction and use of single achromatic eye-pieces for, 195.
- Temperature, diurnal, of the earth's surface, 377, 444.
- Terrestrial magnetism, 212, 221, 287, 369, 465, 468.
- Tetanus, on the human muscular fibre affected by, 301.
- Thames, on the rise and fall of the tide in the river, 330.
- Thermo-electricity, on the phenomena of, 215.
- Thermometer, hourly observations at sea of the, 239.
- , the Royal Society's, on the position of, 3.
- and Barometer, Coggan's, 72.
- Thermometrical observations at Cape Palmas, 331.
- Thin plates, phenomena of, of solid and fluid substances exposed to polarized light, 302.
- Thomas (S. H.), meteorological observations at Alten in Finmarken, 195, 229.
- Thomson (W. T.), account of a line of levels across Northern Syria, from the Mediterranean sea to the river Euphrates, 57.
- Thoracic duct, chemical analysis of the contents of, 373.
- Tiarks (Dr.), notice of the late, 12.
- Tide-gauge, new, 53.
- Tide observations, method of discussing those of Bristol, 73, 243.
- at Petropaulofsk 217; at Sitkhoe, 217; at Prince of Wales's Island, 311; at Singapore, 311; at Tahiti, 440.
- phenomenon, questions respecting, 73.
- Tides, deduction of the laws of, from short observations, 72.
- , low water, on the laws of, at Plymouth, 152.
- at Southampton and at Ipswich, 445.
- in the Thames, on the rise and fall of, 330.
- , register of, at Coringa, 330.
- , researches on, 72, 152, 217, 242.
- , simultaneous observations, 8.
- , the high-water mark at Waterloo Bridge and at London Bridge, 3, 22.
- Timber, strength of pillars of, 228.
- Tin, on the reduction of, 447.
- Tomes (John) on the structure of the teeth, 70.
- Toronto, meteorological observations made at, 295, 380.
- Torpedo, observations on the, 291.
- Toynbee (J.) on the non-vascularity and peculiar uniform mode of organization and nutrition of certain animal tissues, viz. articular cartilage, and the cartilage of different classes of fibro-cartilage; the cornea, the crystalline lens, and the vitreous humour; and the epidermoid appendages, 306, 308.
- Transverse force of electric currents, 56.
- Trevandrum, magnetic and meteorological observations at, 396.
- Tribasic salts, 102.
- Tunica granulosa, a granulous tunic of mammalia not hitherto described, 75.
- Tunica vaginalis oculi, on the, 311.
- Turner (Edw., M.D.), notice of the late, 13.
- Turtles, fossil remains of, in the chalk

- formation of the south-east of England, 305.
- Uterus, on the nerves of the gravid, 189.
- , on the nervous ganglia of the, 321, 395.
- Utting (A.), hourly meteorological observations made at Plymouth, 303.
- , barometrical observations made at Yarmouth, 369.
- Vacuum, relations of a, to electrical phenomena, 55.
- Van Diemen's Land, magnetic and meteorological observations at, 298, 374, 378, 380.
- Vegetable colours, effect of the spectrum on, 208, 393.
- decomposition, influence of nitrogen in promoting, 148.
- impregnation, Mr. Brown's discoveries in, 173.
- tissues, on a new theory of earthy bases of, 52.
- Vegetables, on the ascent of the sap in, 432.
- Vibration of the pendulum, 78.
- Victoria, Queen, the address on the occasion of receiving Her Majesty's signature as Patroness of the Royal Society, 69.
- , the address of congratulation to Her Majesty on the occasion of her marriage, 203.
- , address of congratulation to Her Majesty on the occasion of the traitorous attack made upon her life, 237.
- , address of congratulation to Her Majesty on the birth of the Princess Royal, 281.
- , address of congratulation to Her Majesty on the birth of the Heir to the Throne, 332.
- , address of congratulation on the providential escape of Her Majesty from the attack of an assassin, 391.
- , address of condolence to Her Majesty on the occasion of the demise of H.R.H. the Duke of Sussex, 463.
- Vignolles (Prof.), an original portrait of Sir Isaac Newton presented to the Royal Society by, 296, 333.
- Vigors (N. A.), notice of the late, 261.
- Viola tricolor, action of light on a solution of, spread on paper, 393.
- Vision, binocular, on some remarkable phenomena of, 76.
- , single, with two eyes, on, 199.
- Vitreous humour, a non-vascular animal tissue, 310.
- Vivian (Lord), notice of the late, 415.
- Voltaic battery, Prof. Daniell's constant battery a new form of the, 23.
- , Prof. Daniell's dissected battery, 24.
- battery, constant, account of the effects of a large, 147.
- battery, on the possibility of obtaining a spark before the circuit is completed, 193.
- battery, gas, on the, 463.
- circuit, reduction of metals from solutions of their salts by the, 447.
- circuit, new instruments and processes for determining the constants of a, 469.
- combinations, on, 23, 43, 147, 383, 384.
- electricity, contact theory of, 200, 215; chemical theory of, 201; chemical and contact theories compared, 202; on the production of heat by, 280.
- pile, source of power in the, 200, 213.
- Walton (Rev. W.), meteorological journal kept at Allenheads, with remarks on the rain-gauge, 221, 297, 371.
- Water, on the relative attractions of sulphuric acid for, 81.
- Watson (H. H.) on the relative attractions of sulphuric acid for water, 81.
- Weddle (T.) on a new method of solving numerical equations, 300.
- Wellstead (Lieut.), notice of the late, 419.
- West Indies, magnetical observations made in, 4.
- Wharton (W. L.) on intermitting springs, 43.
- Wheatstone (Prof.) on some remarkable and hitherto unobserved phenomena of binocular vision, 76.
- , description of the electro-magnetic clock, 249.
- , a Royal medal awarded to, 255.
- , account of new instruments and

- processes for determining the constants of a voltaic circuit, 469.
- Whewell (Rev. W.), a Royal medal adjudged to, 6, 21.
- , researches on the tides, 67, 72, 152, 153, 217, 242.
- on the deduction of the laws of the tides, from short series of observations, 72.
- on the laws of low water at Plymouth, and on the permanency of mean water, 152.
- on tide observations made in the Indian seas, 153, 217.
- on the laws of the rise and fall of the sea's surface during each tide, 242.
- Wickham (Capt.), observations of the dip and intensity, made between England and Australia, 212.
- Wilkins (Prof.), notice of the late, 176.
- William IV., notice of his late Majesty, 5.
- Williams (J. L.), notice of the late, 95.
- Willis (Dr. R.) on the special function of the skin, 445.
- on the import and office of the lymphatic vessels, 448.
- Wilmot (F. E.), meteorological observations taken at the Cape of Good Hope, 374, 380.
- Wilson (E.) on the structure and development of a newly discovered parasitic animalcule of the human skin, 455.
- Wind table, from observations taken at Gibraltar, 432.
- Wood (Lieut.), discovery of the source of the Oxus, 83.
- Wordley (Rev. G.), notice of a shock of an earthquake in one of the Scilly Islands, 122.
- Work of a machine, 318.
- Wyattville (Sir J.), notice of the late, 262.
- Yarmouth, barometrical observations made at, 369.
- Yelk, the proper membrane of the, in mammals, 76.
- Yelloly (Dr.), biographical notice of, 415.
- Yorke (Lt.-Col. P.) on electro-chemical equivalents, 232.
- , barometrical observations showing the effect of the direction of the wind on the difference between distant barometers, 386.
- Young (J. R.) on the curvature of surfaces, 112.
- Younghusband (Lieut. C. W.), meteorological observations taken at Toronto, 380.
- Xanthorrhœa hastilis, acaroid resin from, 163.

END OF THE FOURTH VOLUME.